

Patent Claims

1. Use of one or several proteins according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), EED or fragments of said proteins, for performing binding assays using a protein according to SEQ ID NO:2 (PDX-1), wherein the fragments bind to PDX1, for the identification of substances that influence (promote, inhibit, modulate) binding between the protein or proteins or fragment(s) and PDX-1.
2. A process for identifying substances that are suitable for influencing interaction of a protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), of the protein EED, or a fragment of said proteins, with the protein according to SEQ ID NO:2 (PDX-1), where

- a) The protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), the protein EED, or a fragment of said proteins, is labelled,
- b) The protein according to SEQ ID NO:2 (PDX-1) is labelled,
- c) The labelled proteins from step a) and step b) are brought into contact with each other and a measurement is performed to determine the signal or signals of the label(s),

wherein the labels are so selected that interaction of labelled proteins from step a) and b) can be detected and distinguished from the isolated unlabelled proteins via alteration of the detection signal/detection signals,

- d) The mixture from step c) is brought into contact with a substance to be examined, and
- e) Another measurement is performed to determine the signal or signals of the label(s),

wherein the substance to be examined is a substance that influences the interaction, if the signal(s) of the label(s) measured in step e) differ(s) from the signal(s) of the label(s) measured in step c).

3. A process for identifying substances that are suitable for influencing interaction of a protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), EED, or a fragment of said proteins, with the protein according to SEQ ID NO:2 (PDX-1), where
 - a) The protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), the protein EED, or a fragment of said proteins, or
 - b) The protein according to SEQ ID NO:2 (PDX-1) is immobilised on a microtiter plate,
 - c) The other protein in question is labelled and brought into contact with the immobilised protein, wherein the presence of an interaction between the proteins mentioned in a) and b) is confirmed by detecting the labelling after performing corresponding washing steps,
 - d) The proteins are brought into contact with the substance to be examined,wherein the substance to be examined is a substance influencing the interaction if, after addition of the substance to be examined and performing corresponding washing steps on the microtiter plates, the labelling is no longer detectable.
4. Use of a substance that influences the interaction of one or several proteins according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), EED or fragments of said proteins, with the protein according to SEQ ID NO:2 (PDX-1), for manufacture of a pharmaceutical composition for the treatment of diseases that are characterised by decreased synthesis of insulin or that are accompanied by such decrease.
5. Use of a substance that
 - a) Modulates the activity of the protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), and/or the protein EED,

- b) Binds to the protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), the protein EED or to a fragment of said proteins,
- c) Phosphorylates the protein according to SEQ ID NO:2 (PDX1), SEQ ID:4 and SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon) or the protein EED, or
- d) Increases the proportion of the protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II),

for the manufacture of a pharmaceutical compound for the treatment of diseases that are characterised by decreased synthesis of insulin or that are accompanied by such decrease.

- 6. The use according to claims 4 and 5, wherein the disease that is characterised by decreased synthesis of insulin or that is accompanied by decreased synthesis of insulin is diabetes.
- 7. A process for the manufacture of a pharmaceutical composition for the treatment of diseases that are characterised by decreased synthesis of insulin or that are accompanied by such decrease, wherein a process according to claims 2 or 3 is performed, and the substance, which is identified as a substance influencing the interaction of a protein according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), EED or a fragment of said proteins with the protein according to SEQ ID NO:2 (PDX-1), is formulated into a pharmaceutical composition, using suitable excipients and/or carriers.
- 8. A pharmaceutical composition, wherein said compound contains a substance obtainable by a process according to claims 2 or 3 and pharmaceutically compatible excipients and/or carriers.
- 9. The use of one or several proteins according to SEQ ID NO:4 and/or SEQ ID NO:6 and SEQ ID NO:8 (CK II), 10 (14-3-3 epsilon), and EED, and/or fragments of said proteins, for the manufacture of a pharmaceutical preparation for the treatment of a disease that is characterised by decreased synthesis of insulin or that is accompanied by decreased synthesis of insulin is diabetes.

10. The use according to claim 9, wherein the disease is diabetes.
11. Use of one or several nucleic acids according to SEQ ID NO: 3 and/or 5 and 7 or 9, and/or one or several nucleic acids that encode EED, for the manufacture of a pharmaceutical preparation for modulating the synthesis of insulin in an individual.